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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/756,855 | 01/14/2004 | Fumio Ohtomo | 1715465 | 3405 |
| 24240 | 7590 | 08/24/2005 | EXAMINER | |
| CHAPMAN AND CUTLER 111 WEST MONROE STREET CHICAGO, IL 60603 | | | RATCLIFFE, LUKE D | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3662 | |

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/756,855 | Applicant(s) OHTOMO ET AL. | |
| | Examiner Luke D. Ratcliffe | Art Unit 3662 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7 and 8 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 1/16/2003. It is noted, however, that applicant has not filed a certified copy of the 3003-007744 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hines (3778159) in view of Mehnert (4319332).

Hines shows an electric distance meter comprising a device to generate a modulated signal (column 1 lines 5-40), and a pulse signal generation device (column 4 lines 32-40), and a difference frequency signal generation device (column 1 lines 5-40). Mehnert teaches a method of determining distance using a reference value (column 19 lines 65-70) subtracted from an actual received value (column 19 and 20) to obtain an actual distance (column 19 and 20), Mehnert also shows using this technique in a CPU (figure 10 Ref. 203). It would be obvious to modify Hines which uses phase difference to measure distance to include the method of a reference value subtracted from a received value to find distance as taught in Mehnert because this can measure a remote and less reflective object.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hines (3778159) in view of Mehnert (4319332) as applied to claim 1 above, and further in view of Barna (6452666).

Barna shows a circuit for sampling a signal and storing the signal for finding range or distance to an object (column 5 lines 11-16). It would have been obvious to further modify Hines to include the sampling and storage method taught by Barna because this method makes it possible to view different data points in a digital rather than a continuous manor.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hines (3778159) in view of Mehnert (4319332) as applied to claim 1 above, and further in view of Akasu (5179286).

Akasu shows a sampled signal that is averaged and then stored to determine distance to an object. It would be obvious to further modify Hines to include the averaging and storing method taught by Akasu because this method allows for a better signal to noise ratio.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hines (3778159) in view of Mehnert (4319332) as applied to claim 1 above, and further in view of Haruyama (JP410285227A).

Referring to claim 4 Haruyama shows a sine wave that is generated by sample data. It would have been obvious to further modify Hines to include the sine wave generation taught in Haruyama because this makes it possible to measure the phase difference to the received signal and a reference signal.

Referring to claim 5 the integration of a plurality of periods of sampled data is a well known concept and does not contribute any patentable matter to the application.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hines (3778159) in view of Mehnert (4319332) as applied to claim 1 above, and further in view of Ishikawa (4891624).

Ishikawa shows a modulated signal that corresponds to the intermittent pulse signal (column 6 lines 26-51). It would have been obvious to further modify Hines to include the modulated signal generation method taught in Ishikawa because this method allows for simple modulation and demodulation of a signal with a reference.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hines (3778159) in view of Mehnert (4319332) as applied to claim 1 above, and further in view of Ichikawa (JP406051062A).

Ichikawa shows a frequency signal that is generated by inputting a signal directly into the light receiving element. It would have been obvious to further modify Hines to include the signal generation taught in Ichikawa because this method of directly input a signal allows for a better signal to noise ratio and less possibility of error.

Allowable Subject Matter

Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

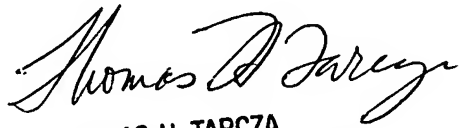
Art Unit: 3662

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke D. Ratcliffe whose telephone number is 571-272-3110. The examiner can normally be reached on 8:00-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LDR


THOMAS H. TARCZA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600